LAND USE

Historic and Recent Land Use

The Lamine River Basin was settled by white immigrants shortly after the return of the Lewis and Clark expedition in 1804 (USDA-SCS 1977). Early descriptions of the basin indicate forests occurred along the stream valleys and steeper slopes leading to prairies on uplands. During the 1800's, common forest flora included hickory, oak, walnut, gum and bottom land hardwoods. As settlement continued, clearing of forests for cropland progressed. By the 1900's, tree cutting increased for fuel and building material and the land was drained as agricultural production expanded. As the land was changed to agricultural use, sediment became a major pollutant affecting the river's ecosystem (USDA-SCS 1977). Analysis of historic aerial photos of the Lamine River in the region of the Lamine River Wildlife Area show dismal land practices within that portion of the basin in the late 1930's (Steve Gough, MDC, Personal Communication). Extensive overgrazing and gully formation on agricultural land are evident. Aerial photos taken in the 1950's and 1960's reveal abandoned pasture and cropland which was severely eroded. Much of the same land was cleared again in the 1970's for agricultural use.

The Lamine River Basin is a rural watershed containing a below average population density compared to that of the state as a whole. (USDA-SCS 1977). The largest community in the watershed is Sedalia with a population of about 20,000. Runoff from the Sedalia area is into the Flat Creek and Muddy Creek subbasins.

Land use in the Lamine River Basin was determined from LANDSAT Thematic Mapper Data (Brown 1989). Approximately one half of the watershed is currently being rowcropped while the remaining half is divided between forest and pasture. Land use in the smaller watersheds within the basin reflects the transition from Prairie to Ozark streams. Land use is mostly cropland in the Prairie Region, while Ozark watersheds are predominantly forested (Table 2). Pasture represents 15-20 percent of land use in almost all of the basin watersheds (Table 2).

Forest land in the Lamine River Basin is typically slopes forested with large contiguous blocks of upland oaks (USDA-SCS 1977). About 14 % of the forest grows on bottom lands. Livestock grazing occurs on approximately 83 % of the forested lands in the basin. Nearly 90 % of the upland forests are grazed. Most of the forest land in the basin is in poor hydrologic condition due to excessive grazing.

No major channelization projects have been completed in the Lamine River basin (MDNR 1986), but as in most agricultural watersheds in Missouri, small stream sections have been straightened by landowners in an attempt to slow erosion on their property. According to SCS personnel (Pettis, Cooper and Morgan Counties), drainage ditches and diversions are limited in the basin as are levees, especially on the mainstem Lamine River. Most drainage modifications were implemented to divert water from upland fields around bottom land fields which have drainage problems.

Soil Conservation Projects

From the mid 1980s through the 1990s a number of watershed practices were conducted by NRCS and the Pettis County SWCD in subwatersheds within Lamine River watershed. Springfork Creek SALT was the first. The project was initiated in 1986 and completed in 1991 for the watersheds of Cheese Creek and Springfork Creek in Pettis and Benton Counties. Cheese Creek flows to Springfork Lake which is the

Landuse of the Lamine River Watershed.

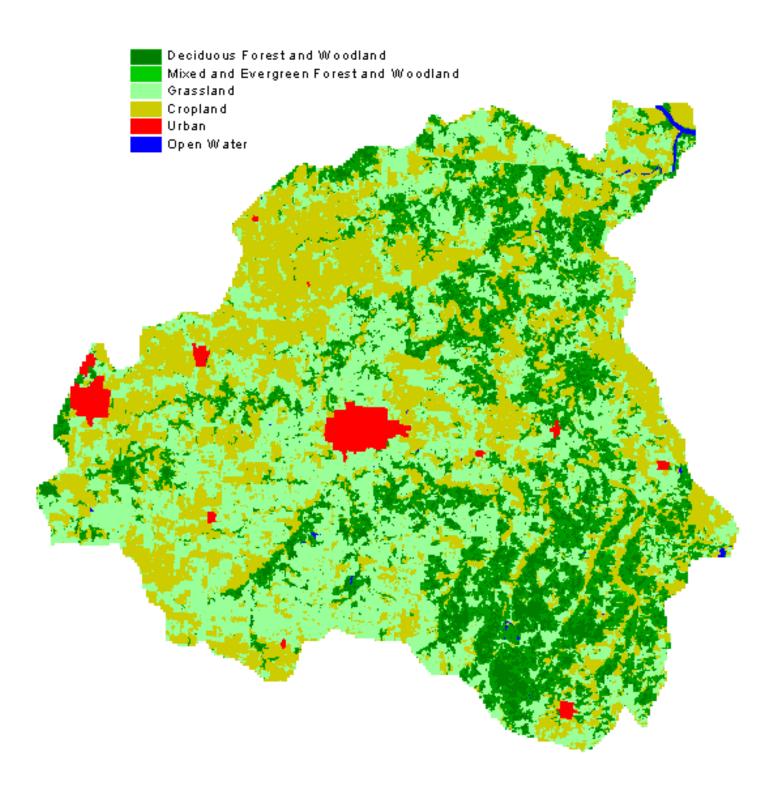


Table 2.

Watershed	Area (mi2)	Forest	Cropland	Pasture	Other
Lamine River above confluence with Blackwater River	1080	33%	46%	18%	3%
Flat Creek	400	24%	55%	19%	2%
Muddy Creek	295	25%	54%	17%	4%
Heath's Creek	107	30%	54%	16%	0%
Richland Creek	137	52%	32%	15%	1%
Haw Creek	72	52%	37%	11%	0%
Gabriel Creek	48	56%	26%	18%	0%

primary water supply for Sedalia. The purpose of the five year project was to reduce levels of nitrogen, phosphorous, and sediment reaching Springfork Lake. This was among the first AgNPS SALT projects conducted in the state. The project allowed small parcels of land to be identified and prioritized for treatment based on impacts to water quality.

Other projects followed primarily to reduce sediment loads reaching streams. Beaver Dam Creek SALT (1990-1995), Long Grove Branch SALT (1990-1995), and Shaver Creek EARTH (1994-1999) projects all helped reduce sediment in the Lamine River watershed.

One project is active, the Flat Creek Environmental Quality Incentive Program (EQIP) project. EQIP uses federal funds to provide cost-shares to willing land owners wishing to improve and protect water quality. Cost share is provided for stack houses, lagoon and other aspects of proper nutrient management. Other agencies are participating including the Missouri Department of Conservation, which is providing cost share for alternate water systems to cattle producers in return for cattle exclusion from streams and riparian areas. MDC also provides technical and cost-share assistance to landowners in Flat Creek watershed.

Public Areas

There are ten public areas owned or managed by MDC and one Missouri Department of Natural Resources (MDNR). Lamine Conservation Area is the largest public area in the basin with 5748 acres of land and 16 miles of stream frontage (Table 3). Manito Lake Wildlife Area is the second largest public area in the basin with 851 acres including a 77 acre lake. Manito Lake is located at the headwaters of the Little Richland Creek. The third largest public area in the basin is J. N. Turkey-Kearn Memorial Wildlife Area which contains approximately 2 miles of frontage along Muddy Creek. Kahrs-Boger Park is the only remaining public area in the basin where frontage of third order or larger streams exists. About one-half mile of Lake Creek, a tributary of Flat Creek, crosses the southeast portion of Kahrs-Boger Park.

Five public stream access sites, with boat ramps, exist on the mainstem Lamine River (Figure 2). The only other public access site (excluding stream frontage on public areas) in the Lamine River Basin is Pinhook Access on Muddy Creek in Pettis County, but it does not have a boat ramp at this time. No state or national forests, national wildlife refuges or MDC natural history areas exist in the Basin.

Corps of Engineers 404 Jurisdiction

The entire Lamine River Basin is under jurisdiction of the Kansas City District of the U.S. Army Corps of Engineers. Applications for 404 permits should be directed to the Kansas City office -- Address: Regulatory Functions, 700 Federal Bldg., Kansas City, MO 64106.

Table 3.

Area	Acres	Frontage (mi)	Major Stream	
Lamine River W.A. (MDC)	5,748	16	Lamine River Flat Creek Richland Creek Otter Creek Harlan Creek	
Manito Lake W.A. (MDC)	851			
J.N. Turkey Kearn Memorial W.A. (MDC)	1,674	4	Muddy Creek Crooked Creek	
W.R. Kearn Memorial W.A. (MDC)	120			
Mora W.A. (MDC)	601			
Bothwell State Park (UNK)	247			
Drover's Prairie (MO Prairie Foundation)	80			
Kahrs-Boger Park (MDC)	108	0.4	Lake Creek	
Grandfather Prairie (MDC)	78			
Paint Brush Prairie (MDC)	314			
Friendly Prairie (MO Prairie Foundation)	40			
Pin Hook Access	4			
Roberts Bluff Access	7			
Harriman Hill Access	37			
De Bourgmont Access	3			
Sedalia CSC	12.4			
Swinging Bridge Access	25			